

Amendments to the Claims

A full listing of the claims is as follows:

1 – 5. (cancelled)

6. (currently amended) An organic light emitting device comprising an electron transporting layer, wherein the electron transporting layer comprises an electron transporting material comprising an organic matrix and a dopant, wherein said dopant is an organometallic compound capable of transferring electrons to said organic matrix, wherein said electron transporting material has a higher conductivity than undoped organic matrix, and wherein said organometallic compound comprises Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, Hf, Ta, W, Re, Os, Ir, Pt, Au or Hg.

7. (currently amended) The electron transporting material organic light emitting device of claim 6 wherein said dopant has an ionization potential within about 0 to about 0.5 eV of the LUMO energy level of said organic matrix.

8. (currently amended) The electron transporting material organic light emitting device of claim 6 wherein said dopant has an ionization potential lower than the LUMO energy level of said organic matrix.

9. (currently amended) The electron transporting material organic light emitting device of claim 6 wherein said dopant is stable in oxidized form.

10. (currently amended) The electron transporting material organic light emitting device of claim 6 wherein said dopant decomposes to redox inactive materials upon oxidation.

11. (currently amended) The electron transporting material organic light emitting device of claim 6 wherein said dopant is present in said organic matrix in an amount of about 0.05 to about 25 percent by weight.

12. (currently amended) The electron transporting material organic light emitting device of claim 6 wherein said organic matrix comprises unsaturated hydrocarbons, unsaturated N- and O-containing heterocycles, or metal complexes.

13. (currently amended) The electron transporting material organic light emitting device of claim 6 wherein said organic matrix comprises phenanthrolines, carbazoles, oxadiazoles, triazoles, triazines, imidazoles, or benzimidazoles.

14. (currently amended) The electron transporting material organic light emitting device of claim 6 wherein said organic matrix comprises bathocuprone, aluminum tris(8-hydroxyquinoline), 4,4'-dicarbazolyl-biphenyl, octaphenylcyclooctatetraene, zirconium tetra(8-hydroxyquinoline), hafnium tetra(8-hydroxyquinoline), 3-phenyl-4-1-naphthyl-5-phenyl-1,2,4-triazole, or 3-(p-tertiary butyl-phenyl)-4-(p-biphenyl)-1,2-,oxadiazole.

15. (currently amended) The electron transporting material organic light emitting device of claim 6 wherein said organic matrix comprises a polymer.

16. (currently amended) The electron transporting material organic light emitting device of claim 15 wherein said dopant is covalently attached to said polymer.

17. (currently amended) The electron transporting material organic light emitting device of claim 15 wherein said polymer is a cyano-substituted polyphenylenevinylene, an oxadiazole-containing polymer, or a triazole-containing polymer.

18 – 30. (cancelled)

31. (currently amended) The organic light emitting device of claim 6, An electron transporting material comprising an organic matrix and a dopant, wherein said dopant is an organometallic compound comprising at least one cyclopentadienyl ligand optionally substituted by one or more substituents selected from H, an electron withdrawing substituent, or an electron donating substituent; wherein said organometallic compound further comprises Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Te, Ru, Rh, Pd, Ag, Cd, Hf, Ta, W, Re, Os, Ir, Pt, Au or Hg; and wherein said dopant is capable of transferring electrons to said organic matrix.

32 – 34. (cancelled)

35. (currently amended) The organic light emitting device electron transporting material of claim 31 wherein said cyclopentadienyl ligand is substituted by at least one electron withdrawing substituent or electron donating substituent.

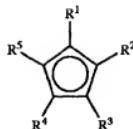
36. (currently amended) The organic light emitting device of claim 6, An electron transporting material comprising an organic matrix and a dopant; wherein said dopant is an organometallic compound comprising at least one arene ligand optionally substituted by one or more substituents selected from H, an electron withdrawing substituent, or an electron donating substituent; wherein said organometallic compound further comprises Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Te, Ru, Rh, Pd, Ag, Cd, Hf, Ta, W, Re, Os, Ir, Pt, Au or Hg; and wherein said dopant is capable of transferring electrons to said organic matrix.

37 – 39. (cancelled)

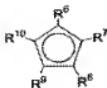
40. (currently amended) The organic light emitting device electron transporting material of claim 36 wherein said arene ligand is substituted by at least one electron withdrawing substituent or electron donating substituent.

41 – 45. (cancelled)

46. (currently amended) The organic light emitting device of claim 6, An electron transporting material comprising an organic matrix and a dopant; wherein said dopant is a metallocene having the formula $M(L^1)(L^2)$, wherein L^1 has the formula:



and L^2 has the formula:



wherein:

each R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, and R¹⁰ is, independently, H, an electron withdrawing substituent, or an electron donating substituent; and
M is Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, Hf, Ta, W, Re, Os, Ir, Pt, Au or Hg; and

~~wherein said dopant is capable of transferring electrons to said organic matrix.~~

47. (cancelled)

48. (currently amended) The organic light emitting device electron transporting material of claim 46 wherein M is Fe, Co, or Cr.

49. (currently amended) The organic light emitting device electron transporting material of claim 46 wherein at least one R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, and R¹⁰ is an electron withdrawing substituent.

50. (currently amended) The organic light emitting device electron transporting material of claim 46 wherein at least one R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, and R¹⁰ is an electron donating substituent.

51. (currently amended) The organic light emitting device electron transporting material of claim 46 wherein at least one R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, and R¹⁰ is alkyl, alkoxy, amino, mercapto, or phosphino.

52. (currently amended) The organic light emitting device electron transporting material of claim 46 wherein at least one R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, and R¹⁰ is aryl, cyano, nitro, carbonyl, tricyanoethenyl, or perfluoroalkyl.

53. (currently amended) The organic light emitting device electron transporting material of claim 46 wherein at least one R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, and R¹⁰ is halogen.

54. (currently amended) The organic light emitting device electron transporting material of claim 46 wherein L¹ and L² are covalently linked by a linking group.

55. (currently amended) The organic light emitting device electron transporting material of claim 54 wherein said linking group comprises an alkyl, aryl, or silyl group.

56 – 77. (cancelled)

78. (currently amended) The organic light emitting device of claim 6, An electron transporting material comprising an organic matrix and a dopant; wherein said dopant is capable incapable of transferring charge to said organic matrix only except when said dopant is optically excited; wherein said dopant is an organometallic compound comprising Ir, Re, Os, Pt, or Au Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Te, Ru, Rh, Pd, Ag, Cd, Hf, Ta, W, Re, Os, Ir, Pt, Au or Hg; and wherein said optically excited dopant transfers electrons to said organic matrix.

79. (cancelled)

80. (cancelled)

81. (currently amended) The organic light emitting device electron transporting material of claim 78 wherein said dopant is chemically altered upon oxidation.

82 – 102. (cancelled)